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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,928	07/24/2001	Hideo Kato	35. C15601	3568

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NEW YORK, NY 10112

EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/910,928

Applicant(s)

KATO, HIDEO

Examiner

Tamra L. Dicus

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 21 and 23 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The RCE and cancellation of claims 1-18, 22, and 24-25 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19 and 23 is rejected under 35 U.S.C. 102(e) as being anticipated by USPN

6,466,365 to Maier et al.

Maier discloses a film coated optical element comprising silicon oxyfluoride film precursor film formed by providing silica particles doped with fluorine forming the film on glass for a vaporization target. Maier discloses using F₂ laser light at a 157 nm value to obtain the refractive index value. See col. 8, lines 40-50, col. 10, lines 35-68, col. 11, lines 1-50, col. 13, and the Example showing a refractive index of 1.65, falling within Applicant's claimed range of 1.60-1.80. To instant claim 23, the antireflection property is inherent as the same material is taught by Maier.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,466,365 to Maier et al. in view of USPN 6,707,616 to Takahashi et al.

Maier essentially discloses the invention above. Maier is silent to teaching CaF₂ (fluorite) of instant claim 21. Takahashi teaches a projection optical system composed of various refracting optical members such as CaF₂ (calcium fluoride or fluorite) and teaches in addition to CaF₂, there may be used, for example, crystalline materials of fluorides such as barium fluoride (BaF), lithium fluoride (LiF), magnesium fluoride (MgF₂), and silica doped with fluorine. Takahashi further explains that LiF is a usable to provide transmissivity. CaF₂ is included in the list of fluorides, and one having ordinary skill in the art would include CaF₂ for similar reasons as the inclusion of LiF. It is reasonable to expect with experimentation to pick any of the aforementioned fluorides listed in order to find which one in the list has the best transmissivity or to experiment with index of refraction matching. Both Maier and Takahashi are in the same technical field of endeavor, namely, optical elements and lithography processes. See col. 2, lines 61-68 of Maier and col. 1, lines 10-15 of Takahashi, thus both references are analogous art. Thus, it would have been obvious to one having ordinary skill in the art to have modified the optical element of Maier to include CaF₂ because Takahashi teaches any of those fluorides may be incorporated with silica doped fluorine to find the best transmissivity and it would be reasonable to expect with experimentation to include any one of the aforesaid fluorides in order to match the index of refraction.

Allowable Subject Matter

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art of record is to USPN 6,466,365 to Maier et al. and USPN 6,465,092 to Takushima et al. Maier teaches a film coated optical element comprising a silica doped fluorine film. Takushima teaches it is known to apply MgF or fluorine-containing resins as antireflection coatings to films over glass, but does not teach a film of silica doped fluorine. Thus the novelty of the invention is the order of the film where a MgF film is adjacent to a silica doped fluorine film.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Because Applicant has now amended the claim to silica doped with fluorine, the new reference to Maier teaches doping silica with fluorine. Takahashi is now used to teach the additional fluorides of instant claims 20-21 comprising silica doped with fluorine. While Takahashi teaches it is not new to mix the fluorines with silica doped fluorine, Takahashi does not teach away from mixing them just because Takahashi states it is hard to produce and unpreferable. If a reference teaches the materials of the instant claims, it does not have to work well. Applicant could overcome the rejections above by including how much dopant is used in the instant claims (e.g. mols of X) or what makes the instant invention work well so long as it is not new matter.

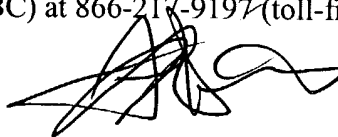
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,242,136 to Moore et al. teaches silicon oxyfluoride glass using F2 laser light to produce a refractive index from 1.60 to 1.80.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

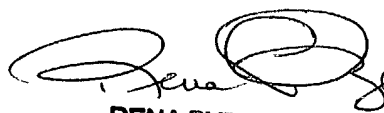
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tamra L. Dicus
Examiner
Art Unit 1774

September 24, 2004



RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774